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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/840,184

05/06/2004

Thierry Borel

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JOSEPH J. LAKS, VICE PRESIDENT
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EXAMINER

SHAPIRO, LEONID

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

07/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/840,184	BOREL ET AL.	
	Examiner	Art Unit	
	Leonid Shapiro	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5-6-04</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1,8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funamoto et al. (6,795,053).

As to claim 1, Funamoto et al. teaches a method for processing an image displayed by a display device (col. 2, lines 43-49) comprising at least one light source (fig. 1, item 16) and one light valve for transmitting or reflecting all or part of the light produced by the light source (fig. 1, item 17), depending on the video signal of the image to be displayed (col. 2, lines 43-55), characterized in that it comprises the following steps:

applying a compression factor C (in the reference is equivalent to applying the APL level) to the grey levels of the image video signal that are higher than (NG1) (in the reference is equivalent to applying the MIN level), the said (NG1) being lower than the peak grey level value (NGmax) (in the reference is equivalent to applying the MAX level) of the image video signal (col. 3, lines 22-40),

adjusting the luminance of the light produced by the light source to the luminance value corresponding to the peak grey level (NG'max) (in the reference is

equivalent to applying the MAX level) of the image after compression (col. 11, lines 5-25),

multiplying the video signal delivered to the light valve by an expansion factor D (in reference GAIN) equal to the ratio of the peak grey level of the image before compression (NGmax) (in the reference is equivalent to applying the MAX level) to the peak grey level of the image after compression (NG'rmax) (in the reference is equivalent to applying the APL level) (Fig. 2, items MAX,MIN,APL, from col. 9, line 65 to col. 10, line 23 and col. 11, lines 26-34).

Funamoto et al. does not disclose a first threshold value, but equating it to the NG1 level.

Since NG1 level is MIN level in the reference, it would have been obvious to one of ordinary skill in the art at the time of the invention to use MIN value instead of the first threshold in order to improve contrast (col. 2, lines 43-49 in the Funamoto et al. reference).

As to claim 8, Funamoto et al. teaches device for displaying an image (col. 2, lines 43-49) comprising:

- a light source for producing light (fig. 1, item 16),

- a light valve for transmitting or reflecting all or part of the light produced by the light source (fig. 1, item 17),

- a circuit for controlling the valve, receiving a video signal of the image to be displayed and delivering a control signal to the said valve that is representative of the image to be displayed (fig. 1, items 11-13,17, col. 9, lines 32-55)

characterized in that the control circuit comprises:

means for applying a compression factor C (in the reference is equivalent to applying the APL level) to the grey levels of the image video signal that are higher than (NG1) (in the reference is equivalent to applying the MIN level), the said (NG1) being lower than the peak grey level value (NGmax) (in the reference is equivalent to applying the MAX level) of the image video signal (col. 3, lines 22-40),

means for adjusting the luminance of the light produced by the light source to the luminance value corresponding to the peak grey level (NG'max) (in the reference is equivalent to applying the MAX level) of the image after compression (col. 11, lines 5-25),

means for multiplying the video signal delivered to the light valve by an expansion factor D (in reference GAIN) equal to the ratio of the peak grey level of the image before compression (NGmax) (in the reference is equivalent to applying the MAX level) to the peak grey level of the image after compression (NG'rnax) (in the reference is equivalent to applying the APL level) (Fig. 2, items MAX,MIN,APL, from col. 9, line 65 to col. 10, line 23 and col. 11, lines 26-34).

Funamoto et al. does not disclose a first threshold value, but equating it to the NG1 level.

Since NG1 level is MIN level in the reference, it would have been obvious to one the ordinary skill in the art the time of the invention to use MIN value instead of the first threshold in order to improve contrast (col. 2, lines 43-49 in the Funamoto et al. reference).

As to claim 9, Funamoto et al. teaches a liquid crystal valve (col. 1, lines 18-32).

As to claim 10, Funamoto et al. does not disclose a micro-mirror valve.

Since Funamoto et al. teaches a passive light modulation type light valve (col. 1, lines 18-32), it would have been obvious to one the ordinary skill in the art the time of the invention to use a micro-mirror valve instead as one of the passive light modulation type light valve in order to improve contrast (col. 2, lines 43-49 in the Funamoto et al. reference).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funamoto et al. as applied to claim 1 above, and further in view of Carro (US 2003/0110384 A1).

Funamoto et al. teaches the first threshold value (NG1) is equal to the lowest grey level of the X brightest pixels of the image to be displayed (in the reference is equivalent to applying the MIN level) (fig. 2, items MAX, MIN, col. 3, lines 22-40).

Funamoto et al. does not disclose X being a predefined percentage of the number of pixels in the image.

Carro teaches a predefined percentage of the number of pixels in the image (page 6, claims 3, 11).

It would have been obvious to one the ordinary skill in the art the time of the invention to use predefined percentage of the number of pixels in the image to verify integrity (paragraph 0001 in the Carro reference).

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funamoto et al. as applied to claim 1 above, and further in view of APA (Admitted Prior Art).

Funamoto et al. does not disclose the first threshold value is greater than or equal to half the maximum value of grey level that can be displayed by the said display device.

APA teaches the first threshold value (NG1) is greater than or equal to half the maximum value of grey level that can be displayed by the said display device (fig. 1, item $V_{max}/2$, page 2 of the Description).

It would have been obvious to one the ordinary skill in the art the time of the invention to use APA approach in the Funamoto et al. reference in order to improve the contrast (Field of the invention in the Description).

Allowable Subject Matter

4. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claim 3 the major difference between the teaching of the prior art of record (Funamoto et al.) and the instant invention is that the compression factor C is taken equal to the ratio of the difference between the peak grey level value (NGmax) of the image before compression and the said first threshold value (NG1) to the difference

between a second threshold value (NG2) and the said first threshold value (NG1), the second threshold value (NG2) corresponding to the value of the peak grey level (NG'max) of the image after compression..

Claims 4-6 depend on claim 3.

Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read 'R. Hjerpe', is positioned above the printed name.

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600